Listing of Claims:

Claims 1-24 (Cancelled)

25. (Currently Amended) A method of die bonding comprising the steps of:

providing a structure comprising a wafer substrate separated from a carrier base by [[an]] a curable adhesive layer in a non-cured state positioned between the carrier base and the wafer substrate;

laser machining through the wafer substrate and the adhesive layer to form a singulated die with an attached singulated adhesive layer, the laser machining including controlling machining parameters of a laser beam in which a first laser machining profile is used to cut through the wafer substrate and a second laser machining profile is used to cut through the adhesive layer, the second laser machining profile being different from the first laser machining profile and adapted to inhibit substantial delamination of the adhesive layer from the carrier base with the adhesive layer in the non-cured state;

performing a first curing process on the attached singulated adhesive layer to release the singulated die and the attached singulated adhesive layer from the carrier base and thereby enable the singulated die and the attached singulated adhesive layer to be removed from the carrier base and placed on a die pad; and

~~adhering~~ performing a second curing process to adhere the singulated die to the die pad ~~by curing the attached singulated adhesive layer~~.

26. (Currently Amended) The method as claimed in claim 25, wherein the machining parameters of the laser beam include laser pulse power, laser pulse repetition rate, laser pulse width, laser scanning speed and laser wavelength, and wherein the first laser machining profile corresponds to a first set of values of the machining parameters and the second laser machining profile corresponds to a second set of values of the machining parameters, a machining parameter value of the second set being different than a corresponding machining parameter value of the first set, the values of the first and second sets being selected such that a speed of machining is maximised while providing a predetermined quality of singulated dies without ~~substantial delamination of the adhesive layer and the carrier base or~~ substantial production of burrs.

27. (Cancelled)

28. (Currently Amended) The method as claimed in claim 25, wherein the step of ~~curing the attached singulated adhesive layer~~ performing the first curing process comprises exposing the attached singulated adhesive layer to ultraviolet light.

29. (Currently Amended) The method as claimed in claim 25, wherein the step of ~~adhering the singulated die to the die pad~~ performing the second curing process comprises heat curing the attached singulated adhesive layer.

30. (Previously Presented) The method as claimed in claim 25, wherein the step of laser machining through the wafer substrate comprises machining a blind via in the wafer substrate or a via through the wafer substrate and the adhesive layer.

31. (Previously Presented) The method as claimed in claim 25, further comprising washing the structure after the laser machining to remove accumulated laser machining debris from the singulated die.

32. (Previously Presented) The method as claimed in claim 31, wherein the step of providing a structure comprises providing a structure having a protective film to protect the structure from debris produced during the laser machining, and the step of washing the structure comprises removing the protective film and laser machining debris accumulated thereon.

33. (Previously Presented) The method as claimed in claim 25, wherein the step of providing a structure comprises providing a structure having a wafer substrate less than 800 microns thick.

34. (Previously Presented) The method as claimed in claim 25, wherein the step of laser machining comprises providing an assist gas environment for laser machining.

35. (Previously Presented) The method as claimed in claim 34, wherein the step of providing an assist gas environment comprises providing a gas environment in which photo-dissociation produces active radicals.

36. (Previously Presented) The method as claimed in claim 34, wherein the step of providing a gas environment reduces deposition of solid machining debris around a laser-machining site.

37. (Previously Presented) The method as claimed in claim 25, wherein the carrier base is one of a dicing tape, an inflexible tape suitable for thin wafer dicing or backgrinding, and a glass or other transparent solid.

38. (Previously Presented) The method as claimed in claim 25, wherein the step of providing a structure comprises providing the wafer substrate separated facedown from substantially inflexible transparent backgrinding tape by the adhesive layer, and wherein the step of laser machining is performed subsequent to backgrinding the wafer substrate.

39. (Previously Presented) The method as claimed in claim 25, wherein the singulated die and the attached singulated adhesive layer are removed from the carrier base and placed on another die to form a multistack die package.

40. (Currently Amended) A ~~die bonding apparatus~~ laser machining system for forming dies from a structure including a wafer substrate, a carrier base, and a curable adhesive layer in a non-cured state and positioned between and adhered to the wafer substrate and the carrier base, the adhesive layer adapted to separate from the carrier base when treated in accordance with a first curing process and adapted to adhere to die pads when placed on the die pads and treated in accordance with a second curing process, comprising:

a laser source arranged to provide a laser beam ~~for machining a structure including a wafer substrate, a carrier base, and an adhesive layer positioned between and adhered to the wafer substrate and the carrier base, the laser beam operable to machine the wafer substrate and the adhesive layer to~~ configured to cut through the wafer substrate and the adhesive layer and thereby form [[a]] singulated [[die]] dies with [[an]] attached singulated adhesive [[layer]] layers~~, the attached singulated adhesive layer adapted to release from the carrier base when exposed to a first curing process and adapted to adhere to a die pad when placed on the die pad and exposed to a second curing process~~;

a laser scanner cooperating with the laser source to impart movement of the laser beam relative to the wafer substrate;

a memory storing first and second laser machining profiles that specify values of machining parameters of the laser source and laser scanner for different machining processes;

a laser controller ~~cooperating~~ communicating with the laser source, [[and]] the laser scanner, and the memory, the laser controller configured to control the machining

parameters ~~of the laser beam; and~~ in accordance with the first and second laser machining profiles, the first laser machining profile being configured to enable the laser beam to cut through the wafer substrate, the second laser machining profile being configured to enable the laser beam to cut through the adhesive layer, and the second laser machining profile being different from the first laser machining profile and adapted to inhibit substantial delamination of the adhesive layer from the carrier base with the adhesive layer in the non-cured state.

~~a memory for storing laser machining profiles used by the laser controller for controlling the laser beam to cut through the wafer substrate and the adhesive layer to thereby form the singulated die and the attached singulated adhesive layer, the laser machining profiles including a first laser machining profile used to cut through the wafer substrate and a second laser machining profile used to cut through the adhesive layer.~~

41. (Currently Amended) The die bonding apparatus as claimed in claim 40, wherein the machining parameters ~~of the laser beam~~ include laser pulse power, laser wavelength, laser pulse repetition rate, laser pulse width, and laser scanning speed, and wherein the first laser machining profile corresponds to a first set of values of the machining parameters and the second laser machining profile corresponds to a second set of values of the machining parameters, a machining parameter value of the second set being different than a corresponding machining parameter value of the first set, the values of the first and second sets being selected such that a speed of machining the structure is maximised while providing a predetermined quality of singulated dies without ~~substantial delamination of the adhesive layer and the carrier base or~~ substantial production of burrs.

42. (Previously Presented) The die bonding apparatus as claimed in claim 41, wherein the machining parameters include a number of scans by the laser beam.

Claims 43-48 (Cancelled)

49. (Previously Presented) The method as claimed in claim 26, wherein each of the wafer substrate and the adhesive layer is characterized by a thickness and a machinability, the first set of values for the machining parameters being selected based on the thickness and the machinability of the wafer substrate, and the second set of values for the machining parameters being selected based on the thickness and the machinability of the adhesive layer.

50. (Previously Presented) The method as claimed in claim 26, wherein the laser machining includes using a third laser machining profile to cut into a portion of the carrier base, the third laser machining profile corresponding to a third set of values for the machining parameters.

51. (Previously Presented) The method as claimed in claim 50, wherein at least two of the first, second, and third laser machining profiles include the same value for at least one of the machining parameters.

52. (Previously Presented) The method as claimed in claim 25, wherein the laser machining comprises:

cutting through the wafer substrate along a pattern to form multiple dice lanes; and

cutting through the adhesive layer along the multiple dice lanes after all of the multiple dice lanes are formed.